

CHAPTER 144 INSPECT AVIONICS TEST EQUIPMENT

Section 1 Background

1. PTRS ACTIVITY CODES

- Avionics: 5460/5470

3. OBJECTIVE. This chapter provides guidance for inspecting test equipment used during the calibration, repair, and overhaul of avionics equipment.

5. GENERAL. A repair facility certified to maintain airborne avionics equipment must have test equipment suitable to perform that maintenance. Regardless of the type of equipment being used, the minimum test equipment necessary to perform the maintenance, as required by the manufacturer, is acceptable.

A. Test Equipment Equivalency. Normally, test equipment which is equivalent to that recommended by the appliance or aircraft manufacturer will be accepted.

B. Test Equipment Updating

(1) State-of-the-art advances often affect the modes and parameters of avionics equipment. Therefore, previously accepted test equipment may need to be modified to ensure compatibility with any new equipment used.

(2) Surplus military test equipment is sometimes used by repair facilities as a primary test unit or as a backup in case of failure of the primary test unit. Modification of this equipment to current industry standards and the equivalency requirements may be required prior to use.

C. Test Equipment Calibration. The regulations require that maintenance facilities test the test equipment at regular intervals to ensure correct calibration.

(1) National Institute of Standards and Technology traceability can be verified by reviewing test equipment calibration records for references to National Institute of Standards and Technology test report numbers. These numbers certify traceability of the equipment used in calibration.

(2) If the repair station uses a standard for performing calibration, that standard can not be used to perform maintenance.

(3) The calibration intervals for test equipment will vary with the type of equipment, environment, and use. The accepted industry practice for calibration intervals is usually one year.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. Prerequisites

- Successful completion of Airworthiness Inspector's Indoctrination Course for General Aviation and Air Carrier Inspections, or previous equivalent

B. Coordination. This task may require coordination with the manufacturer.

3. REFERENCES, FORMS, AND JOB AIDS

A. References

- FAR Parts 43, 65, 121/135, and 145
- Advisory Circular 145-3, Guide for Developing and Evaluating Repair Station Inspection Procedures Manuals, as amended
- Order 8300.10, Vol. 2, Ch. 165, Evaluate FAR Part 145 Repair Station's Facilities and Equipment

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Perform the Inspection*

(1) Determine what test equipment is required by reviewing the operator/manufacturer's maintenance manuals.

(2) Ensure that the agency has full control of the test equipment, i.e. ownership, lease, etc., and that the test equipment is located on the premises.

(3) Ensure that the following is accomplished according to the operator/agency's accepted manual procedures:

- Identification of equipment
- Recording of the date and person/organization calibrating each piece of test equipment

(4) Ensure that inspection and calibration of the precision tools and test equipment is done in accordance with the operator/agency's manual procedures.

B. *Inspect Automatic Test Equipment (ATE)*

(1) Ensure that the ATE testing program provides an in-depth analysis that ensures the aircraft components and testing standards are functionally tested within the prescribed manufacturer's limits.

(2) Verify that management control is accomplished in accordance with the operator/agency's accepted manual and includes procedures for the following:

- The setting of limits and standards
- The performance of evaluation checks and tests
- The updating of a listing that identifies each ATE test by number and a reference to the applicable section of the component manual
- Controlling and identifying the revision status of software programs

(3) Ensure that the operator/agency's purchasing maintenance service, including ATE programs, is accomplished in accordance with the operator/agency's approved maintenance program.

C. *Analyze Results.* Review inspection results and discuss any discrepancies with the operator/agency.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. Completion of this task may result in the following:

- A letter to the operator/agency detailing any discrepancies
- Enforcement Investigation Report (EIR), if applicable

C. *Document Task.* File all supporting paperwork in the operator/agency's office file.

9. FUTURE ACTIVITIES. Follow-up inspections as required.